

What is claimed is:

1. A cam locking assembly comprising:
  - a tie bolt;
  - a lever unit positioned about and rotatable about the tie bolt; and
  - a cam unit positioned about the tie bolt adjacent the lever unit, the cam unit comprising:
    - first and second cam plates, each cam plate comprising a first surface having at least one roller retaining recess, the first and second cam plates positioned with the first surfaces facing one another with the retaining recesses aligned and one of the cam plates engaged by and moveable with the lever unit;
    - a roller positioned between the opposed retainer recesses; and
    - a retainer about the roller configured to maintain the proper position and orientation of the roller.
2. The cam locking assembly of claim 1 wherein the first and second cam plates are substantially identical.
3. The cam locking assembly of claim 1 wherein each recess includes a shallow trough, a deep trough and a ramp extending therebetween.
4. The cam locking assembly of claim 3 wherein the recess of the first cam plate is configured such that the ramp extends from the deep trough to the shallow trough in a first direction and the recess of the second cam plate is configured such that the ramp extends from the deep trough to the shallow trough in a second, opposite direction.
5. The cam locking assembly of claim 1 wherein each cam plate has a second surface opposite the first surface and at least one protrusion extends from the second surface.
6. The cam locking assembly of claim 5 wherein each cam plate has a central bore and the protrusion extends about the central bore and has an elongated configuration with opposed flat sides.

7. The cam locking assembly of claim 6 wherein the lever unit includes a lever plate having a central aperture with an elongated configuration substantially the same as the configuration of the first cam plate protrusion.

8. The cam locking assembly of claim 1 wherein each cam plate includes three equally spaced retaining recesses.

9. The cam locking assembly of claim 1 further comprising a retainer clip positioned about a portion of the lever unit and the cam unit, the retainer clip configured to rotate with the lever unit.

10. The cam locking assembly of claim 9 wherein the lever unit includes a handle extending through a lever passage in the retainer clip, the lever passage having a close fit about the handle.

11. The cam locking assembly of claim 1 wherein the second cam plate engages a splined plate.

12. An adjustable steering column assembly comprising:

a steering column;

a support bracket; and

cam locking assembly comprising:

a tie bolt extending through the steering column and support bracket;

a lever unit positioned about and rotatable about the tie bolt; and

a cam unit positioned about the tie bolt adjacent the lever unit, the cam unit

comprising:

first and second cam plates, each cam plate comprising a first surface having at least one roller retaining recess, the first and second cam plates positioned with the first surfaces facing one another with the retaining recesses aligned and one of the cam plates engaged by and moveable with the lever unit; and

a roller positioned between the opposed retainer recesses; and  
a retainer about the roller configured to maintain the proper position and orientation of the roller.

13. The steering column assembly of claim 12 wherein the first and second cam plates are substantially identical.

14. The steering column assembly of claim 12 wherein each recess includes a shallow trough, a deep trough and a ramp extending therebetween.

15. The steering column assembly of claim 14 wherein the recess of the first cam plate is configured such that the ramp extends from the deep trough to the shallow trough in a first direction and the recess of the second cam plate is configured such that the ramp extends from the deep trough to the shallow trough in a second, opposite direction.

16. The steering column assembly of claim 12 wherein each cam plate has a second surface opposite the first surface and at least one protrusion extends from the second surface.

17. The steering column assembly of claim 16 wherein each cam plate has a central bore and the protrusion extends about the central bore and has an elongated configuration with opposed flat sides.

18. The steering column assembly of claim 17 wherein the lever unit includes a lever plate having a central aperture with an elongated configuration substantially the same as the configuration of the first cam plate protrusion.

19. The steering column assembly of claim 12 wherein each cam plate includes three equally spaced retaining recesses.

20. The steering column assembly of claim 12 further comprising a retainer clip positioned about a portion of the lever unit and the cam unit, the retainer clip configured to rotate with the lever unit.

21. The steering column assembly of claim 20 wherein the lever unit includes a handle extending through a lever passage in the retainer clip, the lever passage having a close fit about the handle.

22. The steering column assembly of claim 12 wherein the second cam plate engages a splined plate that engages splines extending along the steering column.

23. The steering column assembly of claim 12 wherein the support bracket includes spaced apart bracket arms and the steering column is positioned between the bracket arms and the cam locking assembly is positioned outside the bracket arms.

24. The steering column assembly of claim 12 wherein the support bracket includes spaced apart bracket arms and the steering column and the cam locking assembly are positioned between the bracket arms.